

What is claimed is:

1. A supporting mechanism for movably supporting a member to be supported along a supporting shaft, comprising:

5 a plurality of supporting members provided on the member to be supported, each of said supporting members contacting with the supporting shaft on at least two contact points so as to be movable on the supporting shaft, the at least two contact points being apart from each other; and

10 a pressing device for pressing the plurality of supporting members against the supporting shaft so that the contact points of each supporting member simultaneously come into contact with the supporting shaft.

15 2. The supporting mechanism of claim 1, wherein the supporting member has two contact surfaces, which include the contact points, respectively and are in parallel with the supporting shaft, and

the pressing device comes into contact with the supporting shaft at a position existing between the supporting members in a parallel direction with the supporting shaft to press the supporting shaft.

20 3. The supporting mechanism of claim 1, wherein the supporting shaft has an outer circumferential surface on which a threaded portion is formed to move the member to be supported, and

the pressing device is fixed to the member to be supported and includes a rack gear engaging with the threaded portion so as to move the member along the supporting shaft.

25 4. The supporting mechanism of claim 2, wherein the supporting shaft has an outer circumferential surface on which a threaded portion is formed to move the member to be supported, and

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the pressing device is fixed to the member to be supported and includes a rack gear engaging with the threaded portion so as to move the member along the supporting shaft.

5 5. The supporting mechanism of claim 1, further comprising a feeding shaft being disposed in parallel with the supporting shaft and having an outer circumferential surface on which a threaded portion is formed to move the member to be supported, wherein

10 the pressing device is fixed to the member to be supported and includes a rack gear engaging with the threaded portion so as to move the member along the supporting shaft.

15 6. The supporting mechanism of claim 2, further comprising a feeding shaft being disposed in parallel with the supporting shaft and having an outer circumferential surface on which a threaded portion is formed to move the member to be supported, wherein

the pressing device is fixed to the member to be supported and includes a rack gear engaging with the threaded portion so as to move the member along the supporting shaft.

20 7. The supporting mechanism of claim 1, wherein the at least two contact points are apart from each other in a circumferential direction of the supporting shaft.

8. A feeding unit comprising:

(a) a supporting mechanism for movably supporting a member to be supported along a supporting shaft, comprising:

25 a plurality of supporting members provided on the member, each of said supporting members contacting with the supporting shaft on at least two contact points so as to be movable on the supporting shaft, the

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at least two contact points being apart from each other, said supporting shaft having an outer circumferential surface on which a threaded portion is formed to move the member to be supported; and

5 a pressing device for pressing the plurality of supporting members against the supporting shaft so that the contact points of each supporting member simultaneously come into contact with the supporting shaft and the plurality of supporting members simultaneously come into contact with the supporting shaft, said pressing device being fixed to the member to be supported and includes a
10 rack gear engaging with the threaded portion so as to move the member along the supporting shaft; and

(b) a rotation device for rotating the threaded portion engaging with the rack gear, thereby moving the member to be supported along the supporting shaft.

15 9. The feeding unit of claim 8, wherein the supporting member has two contact surfaces, which include the contact points, respectively and are in parallel with the supporting shaft, and

the pressing device comes into contact with the supporting shaft at a position existing between the supporting members in a parallel
20 direction with the supporting shaft to press the supporting shaft.

10. The supporting mechanism of claim 8, wherein the at least two contact points are apart from each other in a circumferential direction of the supporting shaft.

11. A feeding unit comprising:

25 (a) a supporting mechanism for movably supporting a member to be supported along a supporting shaft, comprising:

a plurality of supporting members provided on the member, each

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of said supporting members contacting with the supporting shaft on at least two contact points so as to be movable on the supporting shaft, the at least two contact points being apart from each other, ;

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5 a pressing device for pressing the plurality of supporting members against the supporting shaft so that the contact points of each supporting member simultaneously come into contact with the supporting shaft and the plurality of supporting members simultaneously come into contact with the supporting shaft, the pressing device being fixed to the member to be supported and including a rack gear engaging with the threaded portion so as to move the member along the supporting shaft; and

a feeding shaft being disposed in parallel with the supporting shaft and having an outer circumferential surface on which a threaded portion is formed to move the member to be supported; and

15 (b) a rotation device for rotating the threaded portion engaging with the rack gear, thereby moving the member to be supported along the supporting shaft.

12. The feeding unit of claim 11, wherein the supporting member has two contact surfaces, which include the contact points, respectively and are in parallel with the supporting shaft, and

20 the pressing device comes into contact with the supporting shaft at a position existing between the supporting members in a parallel direction with the supporting shaft to press the supporting shaft.

13. The supporting mechanism of claim 11, wherein the at least two contact points are apart from each other in a circumferential direction of the supporting shaft.